



**DEPARTMENT OF  
BUDGET & MANAGEMENT**

# **Maryland Technical Architecture Framework Guiding Principles for the Technical Standards**

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## Record of Changes

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## **SECTION 1 INTRODUCTION**

### **1.1 Background**

The State of Maryland, hereinafter referred to as “the State”, began their Enterprise Architecture (EA) Program by initiating the Maryland Technical Architecture Framework (MTAF) project. The objectives of the project were to:

- Identify the State’s business drivers
- Develop guiding principles for developing and maintaining the State’s standards
- Develop a Technical Architecture Framework for the State
- Develop a Technical Reference Model (TRM) for the State
- Populate the TRM with technical product profiles, specifications, standards, guiding principles and business drivers
- Capture the current products and underlying standards being used by each agency
- Implement a web-based repository to house the architecture information gathered during the project

### **1.2 Purpose**

This document captures the guiding principles for developing and maintaining the State’s technology standards and recommendations on their implementation. The principles were developed with the assistance of the State’s participating agencies and will be used by the MTAF project team during the development of the standards. They will be used to ensure that the standards meet the expectations of the participating agencies. In addition, these principles will be integrated into a governance process that will guide the maintenance of the standards.

### **1.3 References**

The following documents were used as references in creating the MTAF Guiding Principles:

1. NASCIO Enterprise Architecture Development Tool-Kit v3.0, October 2004.
2. U.S. Food & Drug Administration, Enterprise Architecture Guiding Principles, August 2004.
3. U.S. Environmental Protection Agency, Enterprise Architecture Principles and Drivers, December 2002.
4. U.S. Department of Labor, Enterprise Architecture Guiding Principles, 2002.
5. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response (OSWER), Guiding Principles, 2003.
6. U.S. House of Representatives, Enterprise Architecture Guiding Principles, 2004.
7. U.S. Department of Housing & Urban Development, Enterprise Architecture Principles, 2002.
8. State of Maine, Infrastructure Architecture Principles, 2002.
9. U. S. Railroad Retirement Board, Conceptual Architecture Guiding Principles, July 2001.

## SECTION 2 METHODOLOGY AND APPROACH

### 2.1 General Discussion on Guiding Principles

Guiding Principles are statements that provide direction to support the organization's vision and to serve as a tiebreaker when settling disputes. They provide the basis for dispersed, but integrated, decision making. The guiding principles were developed with the assistance of the agencies to ensure that a uniform method for determining standards is applied for the technologies utilized by all agencies, large or small. The MTAF team will use the principles identified in this document when developing the State's technology standards.

### 2.2 Analytical Approach

The approach for developing the guiding principles entailed a research phase, drafting phase, and a validation phase.

During the research phase the team analyzed different sets of guiding principles. The following five (5) qualities were displayed in the principles reviewed:

- **Understandable** – The principles were clear and unambiguous so that violations, whether intentional or not, would be minimized.
- **Robust** - The principles were sufficiently definitive and precise for resolving complex, potentially controversial situations consistently.
- **Complete** - The principles were applicable to every situation involving the use of Information Technology (IT).
- **Consistent** – The set of principles were not contradictory to the point where adhering to one principle would violate the spirit of another.
- **Stable** – The principles had a "timeless" quality to them, and would be able to transcend all foreseeable changes that may occur.

The team strived to embody these qualities when drafting the State's guiding principles.

### 2.3 Format

The format used to capture the principles was also determined prior to the drafting of the principles. It was determined that each guiding principle would be structured to contain four components:

1. **Identification number** - A unique number used to identify the guiding principle.
2. **Name** - The guiding principle title.
3. **Description** - A narrative that provides further definition of the principle.
4. **Rationale** - An explanation or justification for the guiding principle. The rationale describes the importance of the principle and its relationship to other principles.

## **2.4 Best Practices**

The last activity that was conducted during the research phase was the identification of best practice principles.

The team analyzed best practice principles provided in the NASCIO guidelines and those used by other States and Federal agencies, and then drafted a customized set of principles. These draft principles were made applicable to the State's goal to develop statewide technology standards.

The draft principles were then presented to agency representatives to verify and validate that they captured agency expectations for the development of the technology standards and that they met the five qualities the team identified.

## **SECTION 3 GUIDING PRINCIPLES FOR THE TECHNOLOGY STANDARDS**

### **3.1 Summary**

The feedback provided from the agencies was incorporated into a final set of eight guiding principles. These principles will be used to steer the development and maintenance of the State's technology standards are.

They are:

- GP01 - Employ Vendor Independent Terminology
- GP02 - Align with State, Federal, Local and Private Sector Guidelines
- GP03 - Support Business Needs
- GP04 - Facilitate Extensibility and Scalability
- GP05 - Align with the State's IT Goals and Objectives
- GP06 - Enforce Security and Privacy Requirements
- GP07 - Promote Interoperability
- GP08 - Provide Equal Access for Persons with Disabilities

### **3.2 Guiding Principles**

The guiding principles, descriptions and rationales are contained in the following table:

**Table 3-1: Guiding Principles**

<b>ID</b>	<b>GP01</b>	<b>Name</b>	<b>Employ Vendor Independent Terminology</b>
<b>Description</b>	Technology standards will use vendor independent terminology. Technology standards will not identify specific commercial products or vendors by name.		
<b>Rationale</b>	Vendor independent terminology eliminates bias towards commercial products or vendors and allows full and open competition during procurement.		
<b>ID</b>	<b>GP02</b>	<b>Name</b>	<b>Align with State, Federal, Local and Private Guidelines</b>
<b>Description</b>	Technology standards will be consistent with commonly accepted state, federal, local and private sectors information technology guidelines. Maryland technology standards will use terminology, organization, and structural templates that are commonly utilized in the state, federal, local, and private sector. If conflicts occur between the different sectors, the order of precedence will be state, federal, local, and then private.		
<b>Rationale</b>	Alignment aids the adoption and utilization of common technology standards and best practices among different government and private sector entities.		
<b>ID</b>	<b>GP03</b>	<b>Name</b>	<b>Support Business Needs</b>
<b>Description</b>	Technology standards will be designed and established to support the business needs of the State. The standards developed will directly correlate to the business performed by the State's agencies.		
<b>Rationale</b>	Allowing the business needs to drive the standards provides a relationship between technology and the business and ensures the State does not adopt technology for technology's sake.		
<b>ID</b>	<b>GP04</b>	<b>Name</b>	<b>Facilitate Extensibility and Scalability</b>
<b>Description</b>	Technology standards will accommodate additions or changes to the computing environment, including: functionality, hardware, software, telecommunications resources, number of users, system performance, processing power, network connectivity, or data storage needs.		
<b>Rationale</b>	Standards that imbed the characteristics of extensibility and scalability will enable the State to react to the rapid pace of new technologies, adapt to a changing client base, and deploy standards for modular components. This principle also ensures the standards are practical for all State agencies, regardless of complexity.		
<b>ID</b>	<b>GP05</b>	<b>Name</b>	<b>Align with the State's IT Goals and Objectives</b>
<b>Description</b>	Technology standards will be in accordance with and enable achievement of the State's IT goals and objectives and will assist in successfully achieving them.		
<b>Rationale</b>	Aligning technology standards to IT goals and objectives provides agencies with guidance on how to align their solutions with the State's IT direction.		
<b>ID</b>	<b>GP06</b>	<b>Name</b>	<b>Enforce Security and Privacy Requirements</b>
<b>Description</b>	Technology standards will comply with the State's approved security and privacy requirements including adopted Security policies, standards, and guidelines.		
<b>Rationale</b>	Adherence to this principle will enable the State to: safeguard client information; enhance public trust; protect agency assets; and enable compliance with Federal and State laws.		
<b>ID</b>	<b>GP07</b>	<b>Name</b>	<b>Promote Interoperability</b>
<b>Description</b>	The technology standards will support the ability of systems and data to operate in conjunction with each other seamlessly, via the use of common specifications and standards.		
<b>Rationale</b>	Standards that facilitate interoperability promote the exchange of information in a heterogeneous environment. Each agency can implement solutions specific to their environment and share information with other agencies or organizations.		
<b>ID</b>	<b>GP08</b>	<b>Name</b>	<b>Provide Equal Access for Persons with Disabilities</b>
<b>Description</b>	The technology standards will provide equal access to information technology for persons with disabilities.		
<b>Rationale</b>	Code of Maryland Regulations (COMAR) 17.06 defines uniform non-visual access requirements that must be used during the procurement of information technology and the provision of information technology services by or on behalf of agencies.		

## **SECTION 4 GOVERNANCE RECOMMENDATIONS FOR THE TECHNOLOGY STANDARDS**

This section provides recommendations on implementing the technology standards and serves as guidance for managing the technology standards. Additional definition and coordination, with the appropriate groups, is required to determine how they will be integrated into current processes. The recommendations address the following areas:

- Maintenance
- Communication
- Performance Measurement
- IT Decision-Making
- Resources

### **4.1 Maintenance**

Technology standards become obsolete if they are not continually updated. Therefore, to remain current with technological advances, it is recommended that the technology standards be reviewed and updated on a periodic basis. Maintenance of the standards will ensure that current leading edge (but not bleeding edge) technology is utilized to support Maryland business needs.

### **4.2 Communication**

Technology standards must be communicated if they are to be implemented by the State's agencies. The standards should be published and communicated to all State agencies and they should be made publicly available (except with regard to certain security considerations). Access to the technology standards will allow vendors and State resources to maintain awareness of current and future technology standards.

### **4.3 Performance Measurement**

Although it is important to develop and communicate technology standards, it is even more important to ensure adherence to standards. The State should periodically measure the level of compliance with the technology standards across the State's IT portfolio to assess how well the standards are being implemented.

### **4.4 IT Decision-Making**

The true value of technology standards lies in utilizing them to improve IT decision-making. Proposed and ongoing IT investments should be reviewed against the technology standards for compliance. It is recommended that the standards be built into other processes such as the IT Master Plan submission process.

### **4.5 Resources**

Scarce fiscal and labor resources are a reality for many State agencies. While technology standards will not be prioritized solely on the level of agency resources, the State acknowledges the dependency between resources and an agency's ability to implement new standards. The

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State should take this into consideration when determining agency budgets and prioritizing and implementing technology standards.

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## **SECTION 5 ACRONYM LIST**

COMAR	Code of Maryland Regulations
EA	Enterprise Architecture
IT	Information Technology
MTAF	Maryland Technical Architecture Framework
NASCIO	National Association of State Chief Information Officers
OSWER	Office of Solid Waste and Emergency Response
TRM	Technical Reference Model